REMARKS

Claims 8-14 are pending.

In paragraph No. 6 of the Action, Claims 8-13 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Fitzgerald (U.S. 2002/0052061) in view of JP 52-106380 (Abstract, "JP '380").

Applicant submits that this rejection should be withdrawn because Fitzgerald and JP '380 do not disclose or render obvious the present invention, either alone or in combination.

Present Claim 8 relates to a method for producing a thin film crystal wafer for a III-V group compound semiconductor device, comprising the steps of:

laminating required compound semiconductor thin film crystal layers on a semiconductor substrate by epitaxial growth to obtain a III-V group compound semiconductor single crystal; and

forming a Si-layer on said III-V group compound semiconductor single crystal by epitaxial growth,

wherein said steps are performed in a same epitaxial growth furnace.

Applicant discloses that carrying out the Si-layer laminating process in the same epitaxial growth furnace prevents oxidation of the top layer (8) of GaAs crystals (Fig. 1, and page 9, line 19 to page 10, line 10 of the specification). This prevents surface defects and potential barriers from forming, and results in a semiconductor wafer with excellent surface stability and having good ohmic electrode properties (page 4, lines 8-21).

Fitzgerald relates to a silicon wafer provided with a optoelectronic material for monolithic OEIC. Fitzgerald discloses a wafer obtained by forming a semiconductor material

layer on a substrate of SiO_2 and a Si layer on the semiconductor material layer ([0021], [0031]-[0034]).

The Examiner acknowledges that Fitzgerald does not disclose that the forming steps are performed in the same epitaxial growth furnace.

In order to make up for the deficiency of Fitzgerald, JP '380 is relied on and combined with Fitzgerald.

However, JP '380 discloses a method of growing multiple epitaxial layers where a number of solutions are separately placed in the same furnace and then a crystal substrate is sequentially brought into contact with the solutions. See, page 2, right upper column, lines 10-13 of JP '380, the English translation of which is provided as follows:

> *In view of the above, the present invention was made. The present invention intends to obtain multiple epitaxial layers grown by a method where a number of solutions are separately placed in the same furnace and then a crystal substrate is sequentially brought into contact with the solutions.*

Further, JP '380 only discloses the growth of a III-IV group compound semiconductor layer such as GaAlSb and a III-V group compound semiconductor layer such as GaInSb in the same furnace. See, page 2, left lower column, lines 8-19 of JP '380, the English translation of which is provided as follows:

> *At first, a crystal substrate (3) and solutions (5) and (6) are inserted into a furnace under conditions that the crystal substrate (3), and solutions (5) and (6) are separated from each other. The solutions (5) and (6) are heated to a predetermined temperature. After the crystal substrate (3) is brought contact with the solution (5) by moving a operation bar (2), annealing is conducted to*

> *epitaxially grow a GaAlSb layer. When the desired thickness is reached, the operation bar (2) is moved to separate the crystal substrate (3) from the solution (5). Next, the operation bar (2) is further moved to bring the substrate into contact with the solution (6). In the same manner, after the epitaxial layer of GaInSb is grown to the desired thickness, the operation bar (2) is moved to separate the crystal substrate from the solution (6). In such a manner, the epitaxial layers can be continuously obtained.*

As described above, JP '380 discloses a method for producing a laminated wafer by sequential growth of the III-V group compound semiconductor layer in the growth furnace.

However, JP '380 discloses only the growth of the III-V group of the semiconductor material layer. JP '380 neither discloses nor suggests the growth of the IV group semiconductor layer such as Si. In other words, JP '380 only discloses the sequential growth of a plurality of III-V group compound semiconductor layers in the same epitaxial growth furnace.

Accordingly, JP '380 does not make for the deficiency of Fitzgerald which does not teach the growth of the III-V group compound semiconductor layer and the IV group semiconductor layer in the same epitaxial growth furnace.

Further, Fitzgerald and JP '380 do not teach or suggest the superior results provided by the present invention, that is, the presently claimed method for producing a thin film crystal wafer for a III-V group compound semiconductor device provides a thin film crystal wafer excellent in ohmic property.

Therefore, the present claims are not obvious over Fitzgerald in view of JP '380. Reconsideration and withdrawal of the §103(a) rejection based on Fitzgerald in view of JP '380 are respectfully requested.

In paragraph No. 7 of the Action, Claim 14 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Fitzgerald in view of JP '380, and further in view of Waldrop et al (U.S. 4,999,685).

This rejection should be withdrawn for essentially the same reasons that the rejection of Claim 8 based on Fitzgerald in view of JP '380 should be withdrawn, as discussed above. Waldrop is relied upon as teaching depositing a metal-to-semiconductor contact, such as Au, Cr or Ti, on a heavily doped p-type layer of silicon. The interface layer is deposited on gallium arsenide (abstract). Waldrop does not make up for the deficiencies of Fitzgerald and JP '380.

Allowance is respectfully requested. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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